

# How to describe

Science is based on observation. Observations must be documented and communicated with others. A successful scientist has a well developed vocabulary for description. In laboratory the ability to describe what you experience is a very important part of the notebook and the laboratory report. For this reason I am providing this handout to help you develop your descriptive skills. Over the next week I would like you to choose two different substances to describe and write a descriptive paragraph about each substance. Some ideas for substances: a food or drink, a cleaning product, a bath/beauty product, a medicine. Spend some time just looking at the object before writing anything. Hand in your description of both substances on a single page. The descriptions should be about as long as this introductory paragraph. Please type them.

## Consider all of the senses: sight, sound, taste, touch, smell

### Sight

#### Properties of color

**Hue:** The dominate wavelength i.e. Red, Orange, Yellow, Green, Blue, Violet

**Saturation:** The dominance of the hue – pure color to gray scale. Unsaturated hues become a color on the scale from black to white.

**Value:** Light to dark

Examples of color descriptions: olive green, pale blue, yellow-orange, primary yellow

#### Properties of light

If a substance is *translucent*, light passes through it but is diffused so that one cannot see clearly the details of whatever is on the other side. If a pane is *transparent*, light passes through it nearly or wholly undiffused, so that one can see clearly the details of whatever is on the other side. An ordinary glass window is *transparent*; a frosted glass window is *translucent*. A panel that permits no light to pass through it, such as a piece of plywood, is *opaque*; you can see nothing through it at all.

Luster describes the manner in which light is reflected from the surface of an object. High reflectivity results in shiny objects. Non-reflectance occurs with "dull" surfaces.

#### Shape

**Regular and irregular:** shapes possessing a high degree of symmetry or sameness are described as regular. A square, a triangle, a circle are all regular shapes. A puzzle piece is typically described as irregular.

**Uniformity:** a collection of shapes may be described as uniform or variable, something flat may be described as having a uniform thickness.

#### Size

Size is described using some kind of scale (relative: big vs. small or absolute: 3 inches, 2 cm) and is applied to various dimensions of an object: e.g. height, width, depth, circumference, etc.

#### Quantity

One, two, three, few, many

#### Position

Systems for describing position utilize some kind of reference framework: left vs. right, south, east, north, west, x,y,z axes, 12 o'clock, 6 o'clock, up vs. down or high vs. low, 0 to 360 degrees, latitude and longitude, and so on

## Sound

Sound has many properties: pitch, duration, rhythm, loudness.

## Taste

It is not always possible or advisable to taste something – so many substances are toxic – but when tasting is appropriate the basic tastes are sweet, sour, bitter, salty and umami (savory). Smell impacts tastes so actual descriptions of a “taste” may be very complex.

## Touch

Texture: smooth or rough

Moisture: dry or wet

Friction: slippery, sticky

Hardness (resistance to deformation): hard, soft

Elasticity: brittle, elastic, stretchy

Temperature: hot, cold

## Smell

In order to experience a smell, gas molecules must enter our nose and deposit in our sensory apparatus. This can be very dangerous. Use caution when smelling unknown substances.

Acrid, sweet, strong, mild, pleasant, disagreeable, burning, reference to a well known smell: mint, lemon, coffee, chocolate, etc.

## One last point

A description may be objective or subjective. An objective description is one that can be measured, quantified, or easily repeated by another individual. A subjective description depends on opinion, judgment and it varies from person to person. In science we strive to be objective as our observations must be reproducible. When writing your descriptions ask yourself if the phrases you use are objective or subjective. Be as objective as possible.